

A Revisional Study of the Taiwanese Scarabaeinae (Coleoptera, Scarabaeidae)

Part 1. Two New *Onthophagus* Species from Taiwan

Kimio MASUMOTO

Institute of Human Living Sciences, Otsuma Women's University,
Tokyo, 102–8357 Japan,

Keh-Miin CHEN

Department of Compilation & Translation, Government Information Office,
2, Tientsin Str., Taipei, Taiwan 100, ROC

and

Teruo OCHI

21–6, Kôfudai 5-chome, Toyono-chô, Toyono-gun, Osaka, 563–0104 Japan

Abstract As the first part of a revisional study on the Taiwanese Scarabaeinae, two new *Onthophagus* species are described, *Onthophagus (Indachorius) hsui* sp. nov. and *O. (Micronthophagus) wangi* sp. nov.

Taiwan (Formosa) is an island 36,000 km² in area, located 150 km east of the Asian Continent and lying on the Tropic of Cancer. Its topography and climate is rather complicated. The lowland of Taiwan belongs to the Torrid Zone in the southern half and to the Subtropical Zone in the northern half. It is crowned with many high mountains much more than 3,000 m in height, which are largely covered with temperate forests but sporadically attain to the true alpine zone with subarctic flora. Because of such intricate nature, the faunal diversity is very high and has attracted interest of many specialists for a long time.

In this series, the authors are going to revise all the species of the Taiwanese Scarabaeinae based on specimens with reliable data and to describe new species. They also re-examine past dubious records as possible as they can. In the present part they will describe two new species of the genus *Onthophagus*.

Before going into details, the authors wish to express their sincere gratitude to Dr. Man-Miao YANG and Mr. Jing-Fu TSAI, National Chung Hsing University, Mr. Tai-Chuan WANG, National Taiwan University, Mr. Huan-Chih HSU and Yu-Yi LIEN of

Taipei City, for their assistance in the field surveys. They thank Ms. Mei-Ling CHANG, National Museum of Natural Science, Taichung, and Ms. Ya-Ling LIN, National Taiwan University, for offering specimen materials. Thanks are also due to Dr. Makoto KIUCHI, Tsukuba City, for his kind suggestion about Taiwanese dung beetles and taking very clear photographs inserted in this paper. They thank Dr. Masahiro ÔHARA, Hokkaido University Museum, for permitting examination of the type specimens preserved in the Museum. Finally, they appreciate Dr. Shun-Ichi UÊNO, Emeritus curator of the National Science Museum (Nat. Hist.), Tokyo, for giving them invaluable advice in the course of the present study.

Depositories of the type specimens to be designated are given under each description. The abbreviations used herein are as follows: NSMT—National Science Museum (Nat. Hist.), Tokyo; NMNST—National Museum of Natural Science, Taichung; NCHU—National Chung Hsing University, Taichung; NTU—National Taiwan University, Taipei.

***Onthophagus (Indachorius) hsui* sp. nov.**

(Figs. 1–5)

Brownish black, with dark coppery or dark greenish tinge in some individuals, outer margins of head and legs lighter in colour, hairs on surfaces brownish, elytra with obscure reddish patch in each humeral part; head and pronotum moderately, somewhat vitreously shining, elytra and ventral surface moderately, somewhat sericeously shining; each surface covered with rather long hairs. Body oblong-ovate, rather strongly convex above, weakly flattened in posterior part.

Male. Head inverted subcordate, very weakly covered with isodiametric microsculpture, irregularly punctate, the punctures being a melange of larger and smaller ones; clypeus rugoso-punctate in anterior part, with outer margin gently reflexed, truncate and weakly emarginate in front, clypeo-frontal border curved and gently ridged; ocular lobes weakly depressed in intero-posterior parts (before eyes), with outer margins weakly, roundly produced, clypeo-genal borders gently ridged, the ridges extending postero-interiad; frons inverted trapezoidal, diameter about 2.5 times the width of diameter of an eye in dorsal view; vertex with an oblong, flattened horn, whose upper edge is pointed at each lateral corners, and armed with an elongate, backwardly curved horn at the middle. Eyes medium-sized in dorsal view, crescent-shaped.

Pronotum wider than long (4:3), rather closely, strongly punctate, each puncture with a long hair; apex widely emarginate, base evenly rounded; front angles rather acutely projected anteriorly; lateral margins roundly produced laterad, widest at anterior 1/3; disc strongly convex, noticeably declivous antero-medially behind cephalic horn, the declivity feebly microsculptured, scattered with punctures smaller than in other parts.

Elytra slightly longer than wide, finely punctato-striate, the punctures in striae somewhat ocellated and notching intervals; intervals almost flat, each with two rows of

punctures and hairs.

Pygidium weakly convex, very weakly covered with isodiametric microsculpture, rather closely punctate, each puncture somewhat ocellated and with a long hair.

Legs rather slender; male protibiae with three larger and a smaller outer teeth; ratios of the lengths of the metatibial spur of and metatarsomeres: 0.65; 1.0, 0.34, 0.16, 0.12, 0.31.

Female. Head less strongly produced apicad than in male, fronto-clypeal border with a strongly curved ridge; vertex with a pair of small tubercles. Pronotum more strongly punctate, without anterior declivity.

Body length: 4.4–5.3 mm.

Holotype: ♂, San Hsia, Taipei Hsien, N. Taiwan, 13–VII–2003, K. MASUMOTO leg. (NMNST). Paratypes: 1 ex., same data as for the holotype (NMNST); 2 exs., San Hsia, Taipei Hsien, 26–XI–2003, K. MASUMOTO leg. (NSMT); 2 exs., Fenchihu, Chiayi Hsien, C. Taiwan, 23–XI–2003, K. MASUMOTO leg. (OCHI collection); 1 ex., Fenchihu, Chiayi Hsien, 23–XI–2003, K. MASUMOTO leg. (NCHU); 1 ex., Fenchihu, Chiayi Hsien, 23–XI–2003, K. MASUMOTO leg. (NTU); 1 ex., San Hsia, Taipei Hsien, 26–XI–2003, K. MASUMOTO leg.; 1 ex., Fenchihu, Chiayi Hsien, 23–XI–2003, Y. UTSUNOMIYA leg.

Notes. This new species resembles *Onthophagus (Micronthophagus) gigantivigilans* MASUMOTO, HANBOONSONG et OCHI, 2002, from Thailand, but can be easily distinguished from the latter by the eyes normally sized. This new species also resembles *O. (Indachorius) suginoi* OCHI, 1984, from Okinawa Island, but can be distinguished from the latter by the body more closely and strongly punctate, the head less produced apicad, with the male cephalic horn narrower at the base, and the elytra darkened in colour except for the humeral parts.

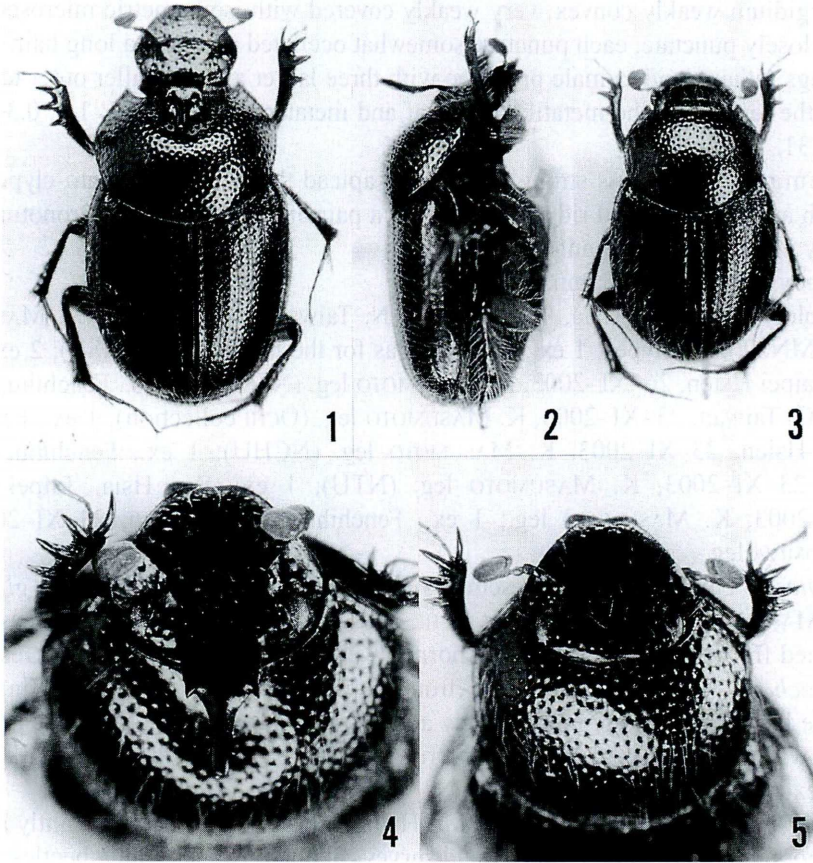
The specific name is given after Mr. Huan-Chih HSU who has constantly assisted the authors in undertaking effective field surveys about Taiwanese dung beetles.

***Onthophagus (Micronthophagus) wangi* sp. nov.**

(Figs. 6–11)

Dark chestnut brown, outer margins of head and legs lighter in colour, antennal clubs, gula and hairs on surfaces yellow with feebly brownish tinge, elytra with obscure reddish patches in humeral parts; head, elytra and ventral surface weakly shining, pronotum moderately, somewhat vitreously shining; each surface clothed with long suberect hairs. Body subovate, rather strongly convex dorsad, weakly flattened in medio-posterior part.

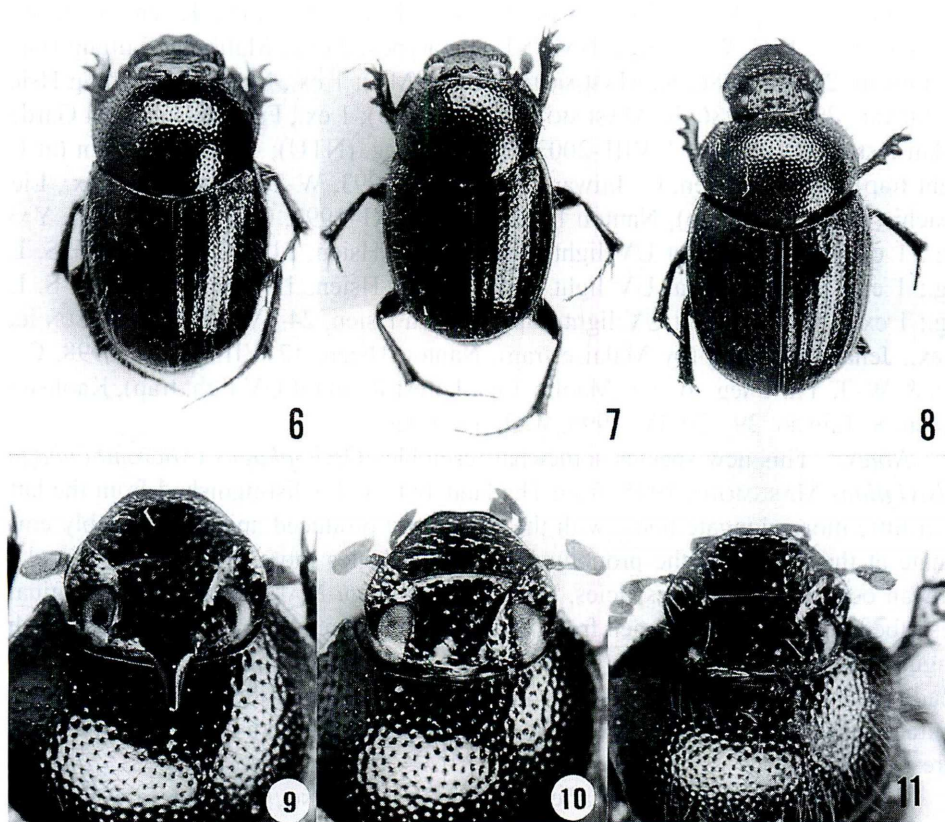
Male. Head semicircular in anterior part and subtrapezoidal in posterior part, gently raised posteriad, coarsely, irregularly punctate, each puncture with a rather long hair; clypeus feebly transversely rugulose, with outer margin gently reflexed, truncate and very slightly emarginate in front, clypeo-frontal border ridged, the ridge slightly bulged anteriad; ocular lobes weakly depressed in posterior parts before eyes, with



Figs. 1–5. *Onthophagus hsui* sp. nov.; 1, habitus of the holotype ♂; 2, ditto, lateral view; 3, habitus of the paratype ♀; 4, anterior part of the male (holotype), 5, anterior part of the female (paratype).

outer margins rounded, clypeo-genal borders ridged, the ridges extending postero-interiad and reaching posterior part of frons; frons somewhat fan-shaped, diameter about three times the width of diameter of an eye in dorsal view; vertex, in larger males, with a flattened and inclined horn, of which the basal part is wide, the middle part abruptly becomes narrower, and the apical part is acutely pointed; in smaller males, the horn is reduced in size, and in the smallest one a pair of small tubercles exist at the middle instead of a horn (similar to females). Eyes large and subreniform in dorsal view, roundly inlaid antieriad into head.

Pronotum wider than long (6 : 7), strongly, rather closely punctate, each puncture with a long hair; apex widely emarginate, feebly produced in medial part; base evenly rounded; front angles produced antieriad; lateral margins roundly produced laterad in dorsal view, widest at apical 1/3; disc moderately convex, weakly concave around the



Figs. 6–11. — 6–8. Habitus of *Onthophagus* spp. from Taiwan; 6, *O. wangi* sp. nov., holotype ♂; 7, same species, paratype ♀. — 8. *O. kono*i MATSUMURA, holotype ♀. — 9–11. Anterior part; 9, *O. wangi* sp. nov., holotype ♂; 10, same species, paratype ♀; 11, anterior part of *O. kono*i MATSUMURA, holotype ♀.

area opposite to the cephalic horn, weakly depressed at medio-basal part, noticeably covered with hairs, which become shorter in the medial part and longer and distinct in the lateral parts.

Elytra finely punctato-striate, the punctures small but notching intervals; intervals very weakly raised, each with two rows of asperate punctures with long suberect hairs.

Pygidium weakly convex, rather closely punctate, each puncture with a long hair; abdominal segment VI with a row of rather strong, haired punctures along base.

Legs medium-sized; male protibia with three outer teeth and a small tooth behind the basal one; ratios of the lengths of the metatibial spur and metatarsomeres: 0.67; 1.0, 0.32, 0.17, 0.16, 0.31.

Female. Compared with male, head less noticeably produced apicad; vertex with a pair of tubercles instead of a cephalic horn.

Body length: 4.5–6.3 mm.

Holotype: ♂, Mt. Li-long Shan, Shihzih Hsiang, Pingtung Hsien, S. Taiwan, 15–XII–2002, T.-C. WANG leg. (NMNST). Paratypes: 2 exs., Malibulu, Taitung Hsien, E. Taiwan, 28–VI–1986, K. MASUMOTO leg. (NSMT); 1 ex., Malibulu, Taitung Hsien, E. Taiwan, 29–IV–1986, K. MASUMOTO leg. (NCHU); 1 ex., Fushan Botanical Garden, Yilan Hsien, N. Taiwan, 7–VIII–2002, Y.-L. LIN leg. (NTU); 4 exs., Chunyan (at UV light trap), Nantou Hsien, C. Taiwan, 27–28–IV–1993, W.-T. YANG leg.; 1 ex., Lienhuachi (at UV light trap), Nantou Hsien, 18–20–XI–1999, C.-S. LIN & W.-T. YANG leg.; 1 ex., Lienhuachi (at UV light trap), Nantou Hsien, 21–22–V–1991, C.-S. LIN leg.; 1 ex., Lienhuachi (at UV light trap), Nantou Hsien, 18–19–V–1991, C.-S. LIN leg.; 1 ex., Lienhuachi (at UV light trap), Nantou Hsien, 24–IV–1991, C.-S. SUN leg.; 1 ex., Jenai Chunyang (by Malaise trap), Nantou Hsien, 12–VIII–8–IX–1998, C.-S. LIN & W.-T. YANG leg.; 6 exs., Maolin Tona Forest Road (at UV light trap), Kaohsiung Hsien, S. Taiwan, 29–30–IV–1998, W.-T. YANG leg.

Notes. This new species somewhat resembles *Onthophagus* (*Micronthophagus*) *falsivigilans* MASUMOTO, 1995, from Thailand, but can be distinguished from the latter by a little more elongate body, with the head more produced apicad and feebly emarginate at the apex, and the pronotum with front angles more protrudent anteriad. In Taiwan occurs one named species, *Onthophagus konoii* MATSUMURA, 1938, originally described on a female specimen from “Naihonpo”. The present new species can be distinguished from MATSUMURA’s species, in the females by a pair of tubercles on the head more widely separated from each other, the pronotum with the front angles more acutely projected anteriad, and the abdominal segment VI with a row of strong punctures.

The specific name is given after Mr. Tai-Chuan WANG, National Taiwan University, who has been assisting the authors in the field researches.

要 約

益本仁雄・陳 克敏・越智輝雄：台湾産タマオシコガネ亜科の再検討。その1，台湾産エンマコガネ属の2新種について。—— 筆者らは台湾産のタマオシコガネ亜科について，台湾に分布するとされるすべての種の再検討をおこない，信頼できるデータに基づくファウナの解明に取り組んでいる。第1報として，エンマコガネ属の新種2種を記載し，*Onthophagus* (*Indachorius*) *hsui* sp. nov. および *O.* (*Micronthophagus*) *wangi* sp. nov. と命名した。両種とも，雄の頭部には顕著な角をそなえるが，前者は複眼がエンマコガネ属としては正常な大きさ（背面から見て）であるのに対し，後者では明らかに大きく，容易に区別がつく。両種は山地の森林中に生息するが，前者は人・獣糞に集集し，後者は光に集まる性質がある。今後は引き続き新種の記載を予定しているが，あわせて，誤同定や実際には他地域に分布する混入標本による過去の記録の追跡もおこなう。

References

- MASUMOTO, K., 1995. Coprophagid-beetles from Northwest Thailand, IX (Coleoptera, Scarabaeidae). *Ent. Rev. Japan, Osaka*, **50**: 59–67.
- Y. HANBOONSONG & T. OCHI, 2002. New species of the genus *Onthophagus* (Coleoptera, Scarabaeidae) from Thailand. *Elytra, Tokyo*, **30**: 159–172.
- MATSUMURA, S., 1938. Onthophagid-insects from Formosa. *Ins. mats., Sapporo*, **12**: 53–63.
- OCHI, T., 1984. Two new species of the genus *Onthophagus* LATREILLE from Taiwan and the Ryukyu Archipelago (Coleoptera, Scarabaeidae). *Ent. Rev. Japan, Osaka*, **39**: 63–67.

Elytra, Tokyo, **32** (1): 131, May 31, 2004

New Records of *Trachyscelis chinensis* CHAMPION (Coleoptera, Tenebrionidae)

Kimio MASUMOTO¹⁾ and Chi-Feng LEE²⁾

¹⁾ Institute of Human Living Sciences, Otsuma Women's University, Tokyo, 102–8357 Japan

²⁾ Institute of Zoology, Academia Sinica, Taipei, 11529 Taiwan

Among the tenebrionid specimens collected by the junior author in Taiwan, the senior author found a short series of *Trachyscelis chinensis* CHAMPION, 1894. It has previously been known from China (Nanmoa Island) and the Ryukyu Islands (from the Tokara Islands to the Yaeyama Islands). This is the first record of the species from Taiwan.

Trachyscelis chinensis CHAMPION, 1894

Trachyscelis chinensis CHAMPION, 1894, Ann. Mag. nat. Hist., (6), **14**: 448.

Materials examined. 6 exs., Kenting N.P., Pingtung Hsien, Taiwan, 9–10–VIII–2000, Chi-Feng LEE leg.; 4 exs., Sanhsientai, Taitung, Taiwan, 12–VIII–2000, Chi-Feng LEE leg.

Reference

- CHAMPION, G. C., 1894. On two new species of tenebrionid Coleoptera from Nanmoa Island. *Ann. Mag. nat. Hist.*, (6), **14**: 448–449.